

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of the claims in the above-captioned patent application.

Listing of Claims:

Claim 1. (Currently Amended) Sample processing system for a plasma spectrometer for analysing at least one sample selected from the group consisting of a viscous samples and sample and a sample which is insoluble at room temperature, comprising:

a tray with tubes containing the sample,

a heating block comprising a thermoregulation switch,

means for collecting the sample from tubes, said means being connected to a transfer tube, the said transfer tube having a length L and a diameter d inside which said sample is pumped down by a peristaltic pump, the said pump being controlled by a controller box and comprising a first pump tubing of internal diameter Φ and a second pump tubing of internal diameter Φ ,

a sample introduction system ~~fed by~~ connected to the peristaltic pump and containing a nebulizer and a spray chamber,

means for detecting a temperature of air adjacent to at least one of the first pump tubing and the second pump tubing, and

means for heating the system, wherein the means for heating the system is configured to apply a first amount of heat to a first portion of the system based at least

on the temperature of the air adjacent to the at least one of the first pump tubing and the second pump tubing

wherein

~~said sample processing system is thermoregulated.~~

Claim 2. (Currently Amended) Sample processing system according to claim 1, ~~wherein the system comprises~~ further comprising:

~~heating means for heating the system,~~

~~control sensors for measuring the temperature of the system at various locations,~~

~~control means for regulating the temperature of the heating means within a predetermined temperature range, and~~

means for detecting a temperature of the transfer tube, wherein the means for heating the system is further configured to apply a second amount of heat to a second portion of the system based at least on the temperature of the transfer tube; and

insulating means to lag the system.

Claim 3. (Currently Amended) Sample processing system according to claim 2, ~~wherein the heating means comprise~~ means for heating comprises:

a heating wire ~~winded~~ wound around each of the transfer tube and ~~the~~ a top of the means for collecting the sample from the tubes,

a heating fan placed underneath tree peristaltic pump, and

a thermoregulated box with a transparent door enclosing the sample introduction system, wherein the system further comprises means for detecting a temperature of air

inside the thermoregulated box, and wherein the means for heating the system is further configured to apply a third amount of heat to a third portion of the system based at least on the temperature of the air inside the thermoregulated box.

Claim 4. (Currently Amended) Sample processing system according to claim 3, further comprising means for controlling the heat applied by the means for heating, wherein the ~~control means comprise~~ means for controlling comprises a plurality of thermo-controllers for regulating the heating wire and the thermoregulated box, and a thermosensor positioned on the pump controller box for regulating the heating fan.

Claim 5. (Currently Amended) Sample processing system according to claim 4, wherein the thermoregulated box is a ~~Delrin®~~ heat resistant insulating box.

Claim 6. (Original) Sample processing system according to claim 3, wherein the insulating means comprise an insulating ribbed Teflon® tube sheathing the transfer tube and the heating wire, and an insulating box enclosing the peristaltic pump, the heating fan and the thermoregulated box.

Claim 7. (Currently Amended) Sample processing system according to claim 3, wherein the means for detecting the temperature of the transfer tube comprises a first control sensor, the means for detecting the temperature of the air inside the thermoregulated box comprises a second control sensor, and the means for detecting the temperature of the air adjacent to the at least one of the first pump tubing and the

second pump tubing comprises a third control sensor, wherein the first control sensors
comprise sensor comprises at least one first thermocouple thermocouples for measuring
the temperatures temperature of air inside the insulating means sheathing the transfer
tube, the second control sensor comprises a second thermocouple for measuring the
temperature of the air inside and the thermoregulated box, and ~~[[a]]~~ the third control
sensor is positioned located under the peristaltic pump body for measuring the
temperature of the air adjacent to each of the first pump tubing and the second pump
tubing next to the first and second pump tubings.

Claim 8. (Currently Amended) Sample processing system according to claim 2,
wherein the ~~control means for regulating the temperature enable to select the~~
~~temperature of each constituting part of the sample processing system according to the~~
~~physical properties of~~ first amount of heat is selected based at least on a physical
property of the at least one sample and the temperature of the air adjacent to the at least
one of the first pump tubing and the second pump tubing to analyse, and the second
amount of heat is selected based at least on the physical property of the at least one
sample and the temperature of the transfer tube.

Claim 9. (Currently Amended) Sample processing system according to claim
~~[[to]]~~ 8, wherein the sample processing system is thermoregulated at temperatures
above 50°C in order to avoid any sediment inside the sample holder, the transfer tube
and the tubings of the peristaltic pump.

Claim 10. (Original) Sample processing system according to claim 1, wherein the means for collecting the sample from the tubes comprise a stainless steel guide for a sample probe and a sample probe holder.

Claim 11. (Original) Sample processing system according to claim 1, wherein the internal diameter Φ' of the second pump tubing is higher than the internal diameter Φ of the first pump tubing.

Claim 12. (Original) Sample processing system according to claim 1, wherein the material constituting the first and second tubing of the peristaltic pump is both heat and solvent resistant.

Claim 13 (New) Sample processing system according to claim 1, wherein the first portion of the system comprises the peristaltic pump.

Claim 14 (New) Sample processing system according to claim 2, wherein the first portion of the system comprises the peristaltic pump, and the second portion of the system comprises the transfer tube.

Claim 15 (New) Sample processing system according to claim 14, wherein the first amount of heat is different than the second amount of heat.

Claim 16 (New) Sample processing system according to claim 3, wherein the first portion of the system comprises the peristaltic pump, the second portion of the system comprises the transfer tube, and the third portion of the system comprises the thermoregulated box.

Claim 17 (New) Sample processing system according to claim 16, wherein the first amount of heat is different than the second amount of heat, and the second amount of heat is different than the third amount of heat.